

Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing: 2002

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2002 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Table 1. Historical Statistics for the Industry: 2002 and Earlier Years

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry and year ¹	Com- panies ²	All estab- lish- ments ³	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expendi- tures (\$1,000)	
			Number ⁴	Payroll (\$1,000)	Number ⁴	Hours (1,000)	Wages (\$1,000)					
333415, Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing	2002...	702	890	105 730	3 722 907	78 506	150 780	2 300 013	12 020 880	11 909 032	24 165 747	'453 778
2001...	N	N	N	118 876	3 950 483	88 978	183 355	2 461 054	11 559 837	13 152 494	24 965 001	748 390
2000...	N	N	N	127 384	4 267 872	97 978	197 144	2 694 603	12 221 528	14 149 913	26 294 108	798 489
1999...	N	N	N	123 962	4 043 064	95 904	190 888	2 567 997	12 376 376	14 002 184	26 220 695	822 227
1998...	N	N	N	120 011	3 844 667	91 994	184 594	2 478 421	11 265 416	13 736 485	25 007 918	630 783
1997...	646	798	N	119 386	3 678 996	90 968	183 802	2 327 827	10 365 938	12 439 075	22 966 588	565 756

¹Statistics presented for years ending in 2 and 7 are census data. Interim census years are derived in a representative sample of manufacturing establishments canvassed in the Annual Survey of Manufactures (ASM).

²For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during the year.

⁴Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 2. Industry Statistics for Selected States: 2002

[States that are a disclosure or with less than 100 employees are not shown. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographical definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments ²		All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number ³	Payroll (\$1,000)	Number ³	Hours (1,000)	Wages (\$1,000)				
333415, Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing												
United States.....	1	890	499	105 730	3 722 907	78 506	150 780	2 300 013	12 020 880	11 909 032	24 165 747	'453 778
Alabama.....	—	9	6	1 624	43 870	1 389	2 755	33 167	130 352	231 207	365 333	'5 466
Arizona.....	—	19	11	1 508	47 245	1 079	2 086	24 888	148 474	119 244	272 583	'2 430
Arkansas.....	—	17	10	4 260	148 341	3 181	6 552	112 399	840 185	520 018	1 375 912	'18 567
California.....	1	91	36	3 633	139 767	2 757	5 132	89 511	337 337	265 777	611 506	'9 761
Colorado.....	1	6	4	1 188	46 478	811	1 732	22 308	191 301	211 191	405 181	'3 383
Florida.....	6	56	21	1 878	61 064	1 392	2 778	35 683	230 797	192 118	424 569	'5 178
Georgia.....	1	32	23	6 727	220 311	5 022	9 834	141 356	603 647	722 670	1 338 365	'14 354
Illinois.....	—	47	31	3 740	128 217	2 824	5 733	79 780	625 162	379 080	1 000 879	'36 395
Indiana.....	6	25	12	3 671	128 982	3 117	5 010	99 493	544 686	446 715	978 520	'47 250
Iowa.....	—	12	10	2 006	72 510	1 677	3 323	54 378	776 509	393 742	1 169 510	'6 854
Kansas.....	—	7	7	1 867	63 174	1 296	2 564	35 102	202 202	276 129	482 607	'31 852
Massachusetts.....	5	11	5	960	31 069	766	1 527	22 000	62 114	70 605	132 946	'1 997
Michigan.....	—	34	17	2 711	97 172	2 001	3 814	60 213	190 284	166 074	365 028	'3 828
Minnesota.....	—	23	16	2 591	110 071	1 619	3 206	55 351	173 923	184 929	390 462	'5 174
Mississippi.....	—	8	6	3 432	86 279	2 864	4 996	62 621	284 761	221 202	515 703	'8 486
Missouri.....	—	16	12	6 861	224 956	5 635	10 380	162 636	645 477	666 771	1 344 145	'21 550
New Hampshire.....	2	6	3	235	8 615	163	319	4 895	16 901	7 647	23 860	'547
New Jersey.....	—	18	11	2 624	81 184	2 169	4 104	57 312	316 915	327 414	637 501	'10 031
New York.....	2	47	28	4 200	175 444	2 755	5 181	87 450	496 547	619 723	1 109 447	'9 591
North Carolina.....	4	23	12	2 343	74 480	1 818	3 327	46 138	272 041	344 266	620 884	'8 064
Ohio.....	—	37	27	4 926	238 172	2 730	5 346	91 068	504 113	544 819	1 069 440	'17 424
Oklahoma.....	1	23	14	3 563	118 957	2 613	5 124	73 848	304 282	357 480	664 215	'9 207
Oregon.....	9	7	3	111	4 102	84	168	2 577	8 595	8 684	17 279	'899
Pennsylvania.....	1	47	28	3 527	140 749	2 449	4 694	86 927	280 756	358 153	642 276	'9 230
Tennessee.....	1	27	22	7 267	241 539	5 960	11 309	177 187	1 057 757	1 128 818	2 175 359	'26 330
Texas.....	2	99	51	11 926	405 608	8 874	17 413	249 268	1 294 556	1 431 482	2 806 878	'58 654
Virginia.....	3	17	12	2 413	89 714	1 859	3 910	61 573	182 514	243 811	470 605	'6 569
Washington.....	1	14	4	332	11 656	228	459	6 910	34 443	42 578	76 693	'940
Wisconsin.....	1	30	18	5 170	207 866	2 973	5 706	93 738	454 221	554 027	1 009 315	'23 723

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

Table 3. Detailed Statistics by Industry: 2002

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Item	Value
333415, Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing	
Companies ¹	702
All establishments ²	890
Establishments with 1 to 19 employees	391
Establishments with 20 to 99 employees	250
Establishments with 100 employees or more	249
All employees ³	105 730
Total compensation	4 835 599
Annual payroll	3 722 907
Total fringe benefits	1 112 692
Production workers, average for year	78 506
Production workers on March 12	81 350
Production workers on May 12	80 906
Production workers on August 12	76 924
Production workers on November 12	74 730
Production worker hours	150 780
Production worker wages	2 300 013
Total cost of materials	11 909 032
Materials, parts, containers, packaging, etc., used	11 043 759
Resales	637 210
Purchased fuels	35 889
Purchased electricity	119 068
Contract work	73 106
Quantity of electricity purchased for heat and power	2 174 168
Quantity of electricity generated less sold for heat and power	4 776
Total value of shipments	24 165 747
Primary products value of shipments	22 800 769
Secondary products value of shipments	401 376
Total miscellaneous receipts	963 602
Value of resales	762 987
Contract receipts	35 346
Other miscellaneous receipts	165 269
Primary products specialization ratio	98
Value of primary products shipments made in all industries	23 279 000
Value of primary products shipments made in this industry	22 800 769
Value of primary products shipments made in other industries	478 231
Coverage ratio	98
Value added	12 020 880
Total inventories, beginning of year	2 618 099
Finished goods inventories	1 205 884
Work-in-process inventories	427 220
Materials and supplies inventories	986 261
Total inventories, end of year	2 293 033
Finished goods inventories	1 024 068
Work-in-process inventories	373 201
Materials and supplies inventories	897 052
Gross value of depreciable assets (acquisition costs) at beginning of year	'7 009 456
Total capital expenditures (new and used)	'453 778
Buildings and other structures (new and used)	'60 514
Machinery and equipment (new and used)	'393 264
Automobiles, trucks, etc., for highway use	'7 555
Computers and peripheral data processing equipment	'20 677
All other expenditures for machinery and equipment	'365 032
Total retirements	'328 691
Gross value of depreciable assets at end of year	'7 134 543
Depreciation charges during year	'458 007
Total rental payments	207 397
Buildings and other structures	108 640
Machinery and equipment	98 757
Total other expenses ⁴	1 444 556
Response coverage ratio ⁵	85
Repair and maintenance services of buildings and/or machinery ⁴	298 033
Communications services ⁴	41 319
Legal services ⁴	33 996
Accounting, auditing, and bookkeeping services ⁴	9 278
Advertising and promotional services ⁴	112 902
Expensed computer hardware and supplies and purchased computer services ⁴	32 634
Refuse removal (including hazardous waste) services ⁴	13 167
Management consulting and administrative services ⁴	54 244
Taxes and license fees ⁴	79 650
All other expenses ⁴	769 335

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

⁴Based on Annual Survey of Manufactures (ASM) sample data.

⁵A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those Annual Survey of Manufactures (ASM) establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note 1: The amounts shown for other expenses reflect only those services that establishments purchase from other companies.

Note 2: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 4. Industry Statistics by Employment Size: 2002

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Employment size class	E ¹	All estab-lish-ments ²	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ³	Payroll (\$1,000)	Number ³	Hours (1,000)	Wages (\$1,000)				
333415, Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing											
All establishments	1	890	105 730	3 722 907	78 506	150 780	2 300 013	12 020 880	11 909 032	24 165 747	'453 778
Establishments with—											
1 to 4 employees	9	166	353	10 875	273	495	7 653	24 966	26 299	51 239	'704
5 to 9 employees	7	105	694	24 547	532	1 051	16 967	71 204	70 542	141 562	'2 517
10 to 19 employees	6	120	1 687	61 989	1 221	2 422	38 767	127 573	172 983	301 439	'5 094
20 to 49 employees	3	157	4 926	174 039	3 499	6 984	100 750	465 631	433 438	911 410	'14 245
50 to 99 employees	2	93	6 694	233 887	4 805	9 087	128 688	592 884	628 663	1 247 532	'23 442
100 to 249 employees	2	143	22 417	751 532	16 423	32 781	431 281	1 945 458	2 285 762	4 285 664	'97 840
250 to 499 employees	1	56	19 480	692 582	14 503	27 785	419 308	2 238 209	1 972 139	4 245 060	'77 493
500 to 999 employees	1	30	20 888	713 764	16 179	31 293	476 217	2 349 943	2 503 274	4 872 613	'83 791
1,000 to 2,499 employees	—	19	k	D	D	D	D	D	D	D	D
2,500 employees or more	—	1	h	D	D	D	D	D	D	D	D
Administrative records ⁴	9	298	2 836	96 915	2 300	4 458	71 400	242 678	255 593	497 782	'7 181

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

²Includes establishments with payroll at any time during the year.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

⁴Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 5. Industry Statistics by Primary Product Class Specialization: 2002

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry or product class code	Industry or primary product class	All establishments ¹	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ²	Payroll (\$1,000)	Number ²	Hours (1,000)	Wages (\$1,000)				
333415	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing	890	105 730	3 722 907	78 506	150 780	2 300 013	12 020 880	11 909 032	24 165 747	'453 778
3334152	Heat transfer equipment (except electrically operated dehumidifiers), mechanically refrigerated, self-contained, except motor vehicle mechanical air-conditioning systems	130	27 019	984 322	19 211	37 453	585 181	2 372 117	2 757 058	5 245 279	'81 775
3334153	Commercial refrigerators and related equipment	105	17 359	590 091	12 734	24 125	357 281	1 544 840	1 371 749	2 938 691	'37 478
3334155	Refrigeration condensing units, all refrigerants, except ammonia (complete)	10	986	38 212	634	1 328	15 988	100 390	153 555	253 661	8 555
3334156	Room air-conditioners and dehumidifiers, except portable	18	4 303	144 461	3 470	7 175	101 145	671 167	501 044	1 152 566	'18 563
3334159	All other miscellaneous refrigeration and air-conditioning equipment	37	4 843	163 570	3 673	6 690	96 771	497 121	519 043	1 013 325	'14 220
333415A	Compressors and compressor units, all refrigerants, except automobiles	32	9 660	342 087	6 980	13 454	185 674	1 039 494	1 382 136	2 473 628	'37 732
333415C	Warm air furnaces, including duct furnaces and humidifiers, and electric comfort heating	28	5 719	195 336	4 816	8 127	152 418	757 847	772 448	1 521 888	'50 793
333415D	Parts and accessories for air-conditioning and heat transfer equipment	50	5 417	169 667	4 183	8 331	110 950	408 277	493 162	893 731	'42 083
333415E	Unitary air-conditioners, except air source heat pumps	53	22 871	835 423	17 242	33 454	533 567	4 014 832	3 282 398	7 382 017	'148 543
333415F	Air source heat pumps, except room air-conditioners	7	1 183	41 320	740	1 302	20 081	85 196	134 221	221 055	'681
333415G	Ground and ground water source heat pumps	7	793	27 698	480	944	12 917	86 554	89 067	175 458	'755

¹Includes establishments with payroll at any time during the year.

²Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6a. Products Statistics: 2002 and 1997

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
333415	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing	2002.. N 1997.. N	X X	X X	23 279 000 21 948 350
3334152	Heat transfer equipment (except electrically operated dehumidifiers), mechanically refrigerated, self-contained, except motor vehicle mechanical air-conditioning systems	2002.. N 1997.. N	X X	X X	4 775 272 N
33341521	Heat transfer equipment (except electrically operated dehumidifiers), mechanically refrigerated, self-contained, except motor vehicle mechanical air-conditioning systems	2002.. N 1997.. N	X X	X X	4 775 272 N
3334152100	Heat transfer equipment (except electrically operated dehumidifiers), mechanically refrigerated, self-contained, except motor vehicle mechanical air-conditioning systems ¹	2002.. 126 1997.. N	X X	X X	4 775 272 N
3334153	Commercial refrigerators and related equipment	2002.. N 1997.. N	X X	X X	2 740 812 2 926 753
33341531	Commercial refrigerators and related equipment	2002.. N 1997.. N	X X	X X	2 718 946 2 897 180
3334153101	Commercial refrigerated sectional coolers and cooling rooms, prefabricated (factory produced) type, including self-contained and remote units	2002.. 37 1997.. 49	X X	S S	719 683 607 853
3334153106	Commercial reach-in refrigerators and reach-in vehicle display cabinets for normal temperature applications (not intended for frozen foods, etc.), including self-contained and remote units	2002.. 21 1997.. 29	X X	381.7 S	465 553 439 081
3334153111	Commercial reach-in refrigerators and reach-in type vehicle display cabinets for low temperature applications, including self-contained and remote units	2002.. 16 1997.. 24	X X	S S	259 105 307 605
3334153116	Commercial closed refrigerated display cases for normal temperature applications, including self-contained and remote units	2002.. 11 1997.. 15	X X	S S	50 601 91 892
3334153121	Commercial open, one level, self-service refrigerated display cases for normal temperature applications, including self-contained and remote units	2002.. 6 1997.. 13	X X	S S	89 622 140 259
3334153126	Commercial open, multilevel, self-service refrigerated display cases for normal temperature applications, including self-contained and remote units	2002.. 9 1997.. 11	X X	S P58.6	341 472 258 310
3334153131	Commercial open, self-service refrigerated frozen food display cases, including self-contained and remote units	2002.. 6 1997.. 7	X X	S 20.4	11 538 90 213
3334153136	Commercial closed, refrigerated frozen food cabinets, other than reach-in type, including self-contained and remote units	2002.. 8 1997.. 9	X X	S S	20 618 112 873
3334153141	Other commercial refrigerated display cases for low temperature applications, including self-contained and remote units	2002.. 7 1997.. 6	X X	S S	58 549 43 150
3334153146	Commercial mechanical refrigerated drinking water coolers ¹	2002.. 4 1997.. 7	X X	X X	203 705 266 233
3334153151	Commercial mechanical refrigerated bottled beverage coolers, dry and wet types, except coin-operated	2002.. 4 1997.. 5	X X	X X	D 44 848
3334153156	Commercial mechanical refrigerated bulk beverage dispensers, including malt dispensers and precooler cabinets, except coin-operated	2002.. 5 1997.. 12	X X	X X	D 242 133
3334153191	Other commercial refrigerators and related equipment	2002.. 24 1997.. 33	X X	X X	325 866 252 730
3334153Y	Commercial refrigerators and related equipment, nsk	2002.. N 1997.. N	X X	X X	21 866 29 573
3334153YVV	Commercial refrigerators and related equipment, nsk	2002.. N 1997.. N	X X	X X	21 866 29 573
3334155	Refrigeration condensing units, all refrigerants, except ammonia (complete)	2002.. N 1997.. N	X X	X X	326 247 289 689
33341551	Refrigeration condensing units, all refrigerants, except ammonia (complete)	2002.. N 1997.. N	X X	X X	326 247 289 689
3334155100	Refrigeration condensing units, all refrigerants, except ammonia (complete) ¹	2002.. 26 1997.. 41	X X	X X	326 247 289 689
3334156	Room air-conditioners and dehumidifiers, except portable dehumidifiers	2002.. N 1997.. N	X X	X X	1 013 318 979 308
33341561	Room air-conditioners and dehumidifiers, except portable dehumidifiers	2002.. N 1997.. N	X X	X X	1 013 318 979 308
3334156100	Room air-conditioners and dehumidifiers, except portable dehumidifiers ¹	2002.. 23 1997.. 20	X X	X X	1 013 318 979 308
3334159	All other miscellaneous refrigeration and air-conditioning equipment	2002.. N 1997.. N	X X	X X	927 792 880 266
33341591	All other miscellaneous refrigeration and air-conditioning equipment	2002.. N 1997.. N	X X	X X	904 534 848 591

See footnotes at end of table.

Table 6a. Products Statistics: 2002 and 1997—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
333415	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing—Con.				
3334159	All other miscellaneous refrigeration and air-conditioning equipment—Con.				
33341591	All other miscellaneous refrigeration and air-conditioning equipment—Con.				
3334159101	Soda fountain refrigeration equipment (cooler box, fountainette, and similar equipment)	2002.. 9	X	X	266 631
		1997.. 14	X	X	202 942
3334159111	Beer dispensing refrigeration equipment	2002.. 6	X	X	7 903
		1997.. 10	X	X	21 720
3334159121	Evaporative air coolers	2002.. 6	X	X	125 829
		1997.. 17	X	X	191 592
3334159131	All other miscellaneous refrigeration equipment	2002.. 24	X	X	192 187
		1997.. 33	X	X	216 310
3334159141	All other miscellaneous air-conditioning equipment	2002.. 16	X	X	311 984
		1997.. 19	X	X	216 027
3334159Y	All other miscellaneous refrigeration and air-conditioning equipment, nsk	2002.. N	X	X	23 258
		1997.. N	X	X	31 675
3334159YV	All other miscellaneous refrigeration and air-conditioning equipment, nsk	2002.. N	X	X	23 258
		1997.. N	X	X	31 675
333415A	Compressors and compressor units, all refrigerants, except automobiles	2002.. N	X	X	2 412 443
		1997.. N	X	X	2 941 370
333415A1	Compressors and compressor units, all refrigerants, except automobiles	2002.. N	X	X	2 412 443
		1997.. N	X	X	2 941 370
333415A100	Compressors and compressor units, all refrigerants, except automobiles ¹	2002.. 41	X	X	2 412 443
		1997.. 52	X	X	2 941 370
333415C	Warm air furnaces, including duct furnaces and humidifiers, and electric comfort heating	2002.. N	X	X	1 915 470
		1997.. N	X	X	1 939 242
333415C1	Warm air furnaces, including duct furnaces and humidifiers, and electric comfort heating	2002.. N	X	X	1 915 470
		1997.. N	X	X	1 939 242
333415C100	Warm air furnaces, including duct furnaces and humidifiers, and electric comfort heating ¹	2002.. 48	X	X	1 915 470
		1997.. 54	X	X	1 939 242
333415D	Parts and accessories for air-conditioning and heat transfer equipment	2002.. N	X	X	1 697 384
		1997.. N	X	X	1 986 124
333415D1	Parts for heat transfer and air-conditioning equipment	2002.. N	X	X	1 673 004
		1997.. N	X	X	1 958 173
333415D101	Parts for heat transfer equipment, including air-conditioning condensing units	2002.. 52	X	X	652 331
		1997.. 45	X	X	703 686
333415D111	Parts for unitary air-conditioners	2002.. 17	X	X	190 978
		1997.. 16	X	X	259 024
333415D121	Parts for commercial refrigeration and related equipment	2002.. 37	X	X	247 976
		1997.. 31	X	X	262 659
333415D131	Parts for compressors and compressor units	2002.. 21	X	X	222 116
		1997.. 27	X	X	305 836
333415D141	Parts for condensing units, excluding air-conditioning condensing units	2002.. 6	X	X	3 511
		1997.. 3	X	X	2 237
333415D151	Parts for dehumidifiers and room air-conditioners	2002.. 5	X	X	13 074
		1997.. 6	X	X	D
333415D161	All other miscellaneous parts for refrigeration equipment	2002.. 10	X	X	73 770
		1997.. 16	X	X	78 700
333415D171	All other miscellaneous parts for air-conditioning equipment	2002.. 18	X	X	172 452
		1997.. 22	X	X	174 763
333415D181	Parts for warm air furnaces, including duct furnaces (excluding complete humidifiers)	2002.. 17	X	X	96 796
		1997.. 15	X	X	D
333415DY	Parts and accessories for air-conditioning and heat transfer equipment, nsk	2002.. N	X	X	24 380
		1997.. N	X	X	27 951
333415DYV	Parts and accessories for air-conditioning and heat transfer equipment, nsk	2002.. N	X	X	24 380
		1997.. N	X	X	27 951
333415E	Unitary air-conditioners, except air source heat pumps	2002.. N	X	X	5 403 811
		1997.. N	X	X	4 364 840
333415E1	Unitary air-conditioners, except air source heat pumps	2002.. N	X	X	5 403 811
		1997.. N	X	X	4 364 840
333415E100	Unitary air-conditioners, except air source heat pumps ¹	2002.. 46	X	X	5 403 811
		1997.. 61	X	X	4 364 840
333415F	Air source heat pumps, except room air-conditioners	2002.. N	X	X	1 150 802
		1997.. N	X	X	1 025 549
333415F1	Air source heat pumps, except room air-conditioners	2002.. N	X	X	1 150 802
		1997.. N	X	X	1 025 549
333415F100	Air source heat pumps, except room air-conditioners ¹	2002.. 19	X	X	1 150 802
		1997.. 26	X	X	1 025 549
333415G	Ground and ground water source heat pumps	2002.. N	X	X	127 840
		1997.. N	X	X	88 501
333415G1	Ground and ground water source heat pumps	2002.. N	X	X	127 840
		1997.. N	X	X	88 501
333415G100	Ground and ground water source heat pumps ¹	2002.. 9	X	X	127 840
		1997.. 7	X	X	88 501

See footnotes at end of table.

Table 6a. **Products Statistics: 2002 and 1997—Con.**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
333415	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing—Con.				
333415W	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing, nsk, total	2002..	X	X	787 809
		1997..	X	X	321 783
333415WY	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing, nsk, total	2002..	X	X	787 809
		1997..	X	X	321 783
333415WYWW	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing, nsk, for nonadministrative-record establishments	2002..	X	X	325 339
		1997..	X	X	132 539
333415WYWW	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing, nsk for administrative-record establishments	2002..	X	X	462 470
		1997..	X	X	189 244

¹For additional detail, see Current Industrial Report MA333M, Refrigeration and Heating Equipment.

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p—10 to 19 percent estimated; q—20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6b. **Product Class Shipments for Selected States: 2002 and 1997**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)
3334152	Heat transfer equipment (except electrically operated dehumidifiers), mechanically refrigerated, self-contained, except motor vehicle mechanical air-conditioning systems	
	United States	2002 .. 4 775 272
	.....	1997 .. N
	Arkansas	2002 .. 336 228
	.....	1997 .. N
	California	2002 .. 127 606
	.....	1997 .. N
	Florida	2002 .. 112 945
	.....	1997 .. N
	Georgia	2002 .. 419 609
	.....	1997 .. N
	Illinois	2002 .. 234 354
	.....	1997 .. N
	Indiana	2002 .. 31 996
	.....	1997 .. N
	Kansas	2002 .. 130 440
	.....	1997 .. N
	Massachusetts	2002 .. 102 305
	.....	1997 .. N
	Michigan	2002 .. 33 030
	.....	1997 .. N
	Minnesota	2002 .. 82 513
	.....	1997 .. N
	Missouri	2002 .. 248 097
	.....	1997 .. N
	New York	2002 .. 367 978
	.....	1997 .. N
	Ohio	2002 .. 61 233
	.....	1997 .. N
	Oklahoma	2002 .. 194 583
	.....	1997 .. N
	Tennessee	2002 .. 239 411
	.....	1997 .. N
	Texas	2002 .. 341 425
	.....	1997 .. N
	Virginia	2002 .. 150 738
	.....	1997 .. N
3334153	Commercial refrigerators and related equipment	
	United States	2002 .. 2 740 812
	.....	1997 .. 2 926 753
	California	2002 .. 176 798
	.....	1997 .. 210 105
	Florida	2002 .. 41 082
	.....	1997 .. 29 174
	Georgia	2002 .. 137 798
	.....	1997 .. N
	Illinois	2002 .. 230 893
	.....	1997 .. 211 056
	Indiana	2002 .. 12 998
	.....	1997 .. 64 298
	Iowa	2002 .. 72 972
	.....	1997 .. 58 929
	Kansas	2002 .. 41 850
	.....	1997 .. 74 868
	Kentucky	2002 .. 14 062
	.....	1997 .. N
	Michigan	2002 .. 129 412
	.....	1997 .. 148 344
	Minnesota	2002 .. 26 790
	.....	1997 .. 122 167
	Mississippi	2002 .. 81 010
	.....	1997 .. 78 977
	New Jersey	2002 .. 35 760
	.....	1997 .. 55 829
	New York	2002 .. 62 490
	.....	1997 .. 64 599
	Ohio	2002 .. 171 138
	.....	1997 .. 171 367
	Pennsylvania	2002 .. 113 136
	.....	1997 .. 85 233
	Tennessee	2002 .. 154 658
	.....	1997 .. 136 178
	Texas	2002 .. 226 448
	.....	1997 .. 234 032
	Wisconsin	2002 .. 142 007
	.....	1997 .. 112 228
3334155	Refrigeration condensing units, all refrigerants, except ammonia (complete)	
	United States	2002 .. 326 247
	.....	1997 .. 289 689
	Texas	2002 .. 8 606
	.....	1997 .. N
3334156	Room air-conditioners and dehumidifiers, except portable dehumidifiers	
	United States	2002 .. 1 013 318
	.....	1997 .. 979 308
3334159	All other miscellaneous refrigeration and air-conditioning equipment	
	United States	2002 .. 927 792
	.....	1997 .. 880 266
	Arizona	2002 .. 75 307
	.....	1997 .. 89 900
	California	2002 .. 83 684
	.....	1997 .. 78 896
	Florida	2002 .. 6 166
	.....	1997 .. N
	Illinois	2002 .. 16 003

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 2002 and 1997—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)
3334159	All other miscellaneous refrigeration and air-conditioning equipment—Con.	
	United States—Con.	
	Ohio	1997.. 34 433
	Texas	2002.. 5 271
		1997.. N
		2002.. 60 134
		1997.. 80 247
333415A	Compressors and compressor units, all refrigerants, except automotives	
	United States	2002.. 2 412 443
		1997.. 2 941 370
	Georgia	2002.. 118 974
		1997.. 74 726
	North Carolina	2002.. 310 753
		1997.. 364 821
	Texas	2002.. 38 338
		1997.. 39 673
	Wisconsin	2002.. 108 710
		1997.. 34 531
333415C	Warm air furnaces, including duct furnaces and humidifiers, and electric comfort heating	
	United States	2002.. 1 915 470
		1997.. 1 939 242
	Michigan	2002.. 35 010
		1997.. 34 188
	Pennsylvania	2002.. 28 794
		1997.. N
	Tennessee	2002.. 87 177
		1997.. 194 473
333415D	Parts and accessories for air-conditioning and heat transfer equipment	
	United States	2002.. 1 697 384
		1997.. 1 986 124
	Arizona	2002.. 34 106
		1997.. 3 192
	California	2002.. 38 517
		1997.. 36 154
	Colorado	2002.. 11 443
		1997.. N
	Georgia	2002.. 12 232
		1997.. N
	Illinois	2002.. 56 850
		1997.. 59 664
	Indiana	2002.. 114 705
		1997.. N
	Iowa	2002.. 120 656
		1997.. N
	Kentucky	2002.. 39 643
		1997.. N
	Maryland	2002.. 30 275
		1997.. N
	Michigan	2002.. 35 070
		1997.. 37 025
	Minnesota	2002.. 43 750
		1997.. N
	Missouri	2002.. 109 438
		1997.. 129 535
	New York	2002.. 58 554
		1997.. 140 379
	North Carolina	2002.. 58 575
		1997.. N
	Ohio	2002.. 76 630
		1997.. 119 557
	Oklahoma	2002.. 22 049
		1997.. N
	Pennsylvania	2002.. 44 489
		1997.. 33 146
	Tennessee	2002.. 127 450
		1997.. 229 917
	Texas	2002.. 161 403
		1997.. 251 607
	Virginia	2002.. 10 566
		1997.. 17 411
	Wisconsin	2002.. 185 113
		1997.. 78 008
333415E	Unitary air-conditioners, except air source heat pumps	
	United States	2002.. 5 403 811
		1997.. 4 364 840
	Florida	2002.. 101 351
		1997.. N
	Georgia	2002.. 270 282
		1997.. 289 553
	Minnesota	2002.. 166 863
		1997.. 166 050
	Ohio	2002.. 386 295
		1997.. 450 828
	Oklahoma	2002.. 358 593
		1997.. 331 658
	Tennessee	2002.. 1 227 541
		1997.. 1 324 453
	Texas	2002.. 1 069 191
		1997.. 937 926
	Virginia	2002.. 59 582
		1997.. N

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 2002 and 1997—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)
333415F	Air source heat pumps, except room air-conditioners	
	United States..... 2002..	1 150 802
	..... 1997..	1 025 549
	Texas 2002..	436 139
	..... 1997..	373 851
333415G	Ground and ground water source heat pumps	
	United States..... 2002..	127 840
	..... 1997..	88 501

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

Table 7. Materials Consumed by Kind: 2002 and 1997

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Material code	Material consumed	Quantity	Delivered cost (\$1,000)
333415	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing		
00900001	Total materials .....2002..	X	11 043 759
	.....1997..	X	11 535 502
001900A6	Refrigeration compressors, compressor units, condensing units, and other heat transfer equipment .....2002..	X	1 915 770
	.....1997..	X	1 686 209
33531209	Fractional horsepower electric timing motors, synchronous and subsynchronous (less than 1 hp) .....2002..	X	313 898
	.....1997..	X	233 853
33531223	Fractional horsepower electric motors (less than 1 hp), excluding timing motors .....2002..	X	228 071
	.....1997..	X	334 893
33531221	Integral horsepower electric motors and generators (1 hp or more) .....2002..	X	475 667
	.....1997..	X	772 225
33341200	Fans and blowers .....2002..	X	180 358
	.....1997..	X	160 903
001900B1	Electrical transmission, distribution, and control equipment .....2002..	X	347 741
	.....1997..	X	494 627
33593101	Current-carrying wiring devices .....2002..	X	149 668
	.....1997..	X	191 831
33451200	Automatic temperature controls (thermostats, regulators, etc.) .....2002..	X	267 931
	.....1997..	X	361 032
33299101	Ball and roller bearings (mounted or unmounted) .....2002..	X	22 727
	.....1997..	X	32 498
33272203	Metal bolts, nuts, screws, washers, rivets, and other screw machine products .....2002..	X	186 118
	.....1997..	X	168 472
332000AC	Metal stampings .....2002..	X	141 507
	.....1997..	X	274 329
33251005	Metal hardware (including hinges, handles, locks, casters, etc.) .....2002..	X	71 181
	.....1997..	X	70 484
33291901	Metal pipe, valves, and pipe fittings (excluding forgings) .....2002..	X	158 247
	.....1997..	X	198 373
33200053	All other fabricated metal products (excluding forgings) .....2002..	X	304 182
	.....1997..	X	315 747
33210000	Forgings .....2002..	X	23 687
	.....1997..	X	N
33151001	Iron and steel castings (rough and semifinished) .....2002..	X	377 567
	.....1997..	X	363 827
33152005	Aluminum and aluminum-base alloy castings (rough and semifinished) .....2002..	X	118 640
	.....1997..	X	94 726
33152003	Other nonferrous metal castings, rough and semifinished (including aluminum and aluminum-base alloy) .....2002..	X	22 858
	.....1997..	X	10 184
33120007	Steel bars, bar shapes, and plate (excluding castings, forgings, and fabricated metal products) .....2002..	X	247 441
	.....1997..	X	288 263
33120016	Steel sheet and strip (including tinplate) .....2002..	X	667 088
	.....1997..	X	N
33120025	Steel wire and wire products .....2002..	X	53 467
	.....1997..	X	33 633
33120035	All other steel shapes and forms (excluding castings, forgings, and fabricated metal products) .....2002..	X	123 414
	.....1997..	X	156 366
33142135	Copper and copper-base alloy pipe and tube (excluding castings, forgings, and fabricated metal products) .....2002..	X	495 538
	.....1997..	X	532 341
33142141	All other copper and copper-base alloy shapes and forms (excluding castings, forgings, and fabricated metal products) .....2002..	X	52 066
	.....1997..	X	N
33131500	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing .....2002..	X	285 239
	.....1997..	X	N
33100055	All other aluminum and aluminum-base alloy shapes and forms (excluding castings, forgings, and fabricated metal products) .....2002..	X	46 474
	.....1997..	X	76 507
33100082	Other nonferrous metal shapes and forms (excluding aluminum and aluminum-base alloy and copper and copper-base alloy castings, forgings, and fabricated metal products) .....2002..	X	35 196
	.....1997..	X	N
32220017	Paper and paperboard containers (including shipping sacks and other paper packaging supplies) .....2002..	X	146 482
	.....1997..	X	161 505
32192003	Wooden containers, complete (including combination wood and paperboard) .....2002..	X	43 504
	.....1997..	X	45 406
32551002	Paints, varnishes, stains, lacquers, shellacs, japans, enamels, and allied product .....2002..	X	43 999
	.....1997..	X	N
32510027	Refrigerant gases and other synthetic organic chemicals .....2002..	X	68 178
	.....1997..	X	85 994
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc. ....2002..	X	78 942
	.....1997..	X	59 485
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes .....2002..	X	90 038
	.....1997..	X	94 501
32610007	Fabricated plastics products (excluding gaskets, hoses, and belting) .....2002..	X	163 982
	.....1997..	X	169 435
32622001	Rubber and plastics hose and belting .....2002..	X	37 074
	.....1997..	X	42 354
33999101	Gaskets (all types) and asbestos packing .....2002..	X	45 686
	.....1997..	X	43 206
32799301	Mineral wool insulation (fibrous glass, rock wool, etc.) .....2002..	X	65 274
	.....1997..	X	94 281
00970099	All other materials and components, parts, containers, and supplies .....2002..	X	1 817 310
	.....1997..	X	2 727 852
00971000	Materials, ingredients, containers, and supplies, nsk .....2002..	X	1 131 549
	.....1997..	X	1 160 160

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.